Doc Code: AP.PRE.REQ

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)
RA-5417

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)]	Application Number	Filed
	10/008,952	12/06/2001
on ___July 20, 2006___	First Named Inventor	
Signature _Kathleen Klinkhammer_	Ashley K. Wise	
Typed or printed name Kathleen Klinkhammer	Art Unit	Examiner
	2193	J. Mitchell

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
    Note: No more than five (5) pages may be provided.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)

☒ attorney or agent of record. 35,274
Registration number _____

☐ attorney or agent acting under 37 CFR 1.34.

Registration number if acting under 37 CFR 1.34 _____

_____
Signature

LeRoy D. Maunu
Typed or printed name
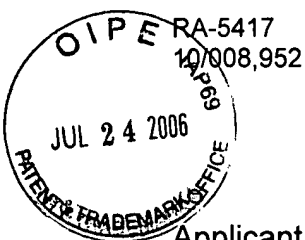
651-686-6633
Telephone number

July 20, 2006
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.
Submit multiple forms if more than one signature is required, see below*.

☐ *Total of _____ forms are submitted.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	WISE	Examiner:	Mitchell, J.
Serial No.:	10/008,952	Group Art Unit:	2193
Filed:	December 6, 2001	Docket No.:	RA-5417 (USYS.030PA)
Title:	ARBITRARY AND EXPANDABLE HIGH-PRECISION DATATYPE AND METHOD OF PROCESSING		

PRE-APPEAL CONFERENCE BRIEF

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This Brief is submitted for the Pre-appeal Conference requested in the Notice of Appeal with which this Brief is submitted. Reversal of the rejections is respectfully requested in view of the arguments set forth below.

The Examiner has failed to establish a *prima facie* case of obviousness of claims 1-4 and 6-20 over the White-Hardy-Carey combination and other combinations because all the limitations are not shown to be suggested by the combination and a proper motivation for modifying White with teachings of Hardy and Carey and has not been provided. The Examiner's alleged correspondences of elements of the White-Hardy-Carey combination to the claim limitations are clearly in error. In addition, the Examiner omits an element needed for a *prima facie* case of obviousness by failing to provide evidence that supports making the White-Hardy-Carey combination.

In claim 1, for example, the cited teachings of the White-Hardy-Carey combination neither teach nor suggest the claim limitations of allocating memory for a first number of available storage nodes, responsive to the total number being less than

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first threshold value, and establishing the first number of available storage nodes; and removing a second number of storage nodes from the plurality of available storage nodes responsive to the total number being greater than a second threshold value, and deallocating memory for the second number of storage nodes.

In one Office Action the Examiner explained that "the teaching in Carey that is relied upon is simply the application of an optimal range of available nodes in a free list (minimum and maximum thresholds)." In a subsequent Office Action the Examiner explained that "one of ordinary skill in the art would ... not have replaced the existing allocation / deallocation means taught in Hardy .. with those of Carey, thus creating a free list manager with uses conventional allocation / deallocation from / to memory ... to maintain a number of free nodes between lower and upper thresholds..."

The cited portions of Carey neither teach nor suggest the claim limitations, and it is unclear from these explanations what teachings from Carey are proposed for making the combination.

Looking to how Carey accomplishes making available an optimal range of available nodes in a free list, it can be seen that the approach taught by Carey does not suggest or reasonably correspond to the claim limitations. Carey, in order to achieve the desired number of available free pages, does not allocate and deallocate memory as claimed. Rather, Carey teaches returning pages that are used to a list of free page buffers. Thus, there is no allocation and deallocation of memory as claimed.

Carey teaches a shared cache system in which data retrieved from mass storage is stored in a page buffer taken from a free buffer list for access by users-sessions (col. 5, I. 1-4; 54-56). "To minimize processing delays which can occur when the free list becomes empty, the paging manager 15 maintains a counter of the number of entries on the free list." (col. 7, I. 40-42). When a minimum threshold is met, a collecting operation frees additional page buffers (col. 7, I. 43-46). The page buffers that are put back to the free list are taken from the page buffers that are in use (col. 7, I. 64 – col. 8, I. 43). Thus, Carey reclaims page buffers that are in use, and Carey's approach would render the White-Hardy combination inoperable. If, in applying Carey's approach to the White-Hardy combination, memory used to store a bignum in the White-Hardy combination was collected while a program was using that bignum, the program's

operation would be corrupted.

As explained in the MPEP §2143.01 (V) "If [the] proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Therefore, the asserted modification to Hardy is improper.

Furthermore, neither Carey nor Hardy suggest the specific claim limitations of allocating and deallocating memory according to the threshold values. Carey teaches managing a list of free page buffers. Carey's allocation of memory for caching persistent data takes place at startup (col. 7, l. 60-63), which shows that Carey distinguishes between management of a free list and allocating and deallocating memory. The cited portion of Hardy simply teaches that "host system memory will be allocated in blocks of user-defined size..." (col. 8, l. 6-7). There is no suggestion of any deallocation of blocks, nor is there any suggestion of use of threshold values in the allocation and deallocation process.

The Office Action further fails to show that the White-Hardy-Carey combination suggests the limitations of storing a numerical value in the allocated plurality of storage nodes and forming a linked list of the allocated plurality of storage nodes. Hardy appears to store multiple pixel values in the linked list of pixel value nodes (col. 6, l 35-37). The linked list appears to accommodate a desired number of overlays of image values for a pixel location in an image (col. 5, l. 50-53). Thus, Hardy apparently stores one pixel value in each pixel value node in the linked list. This is not suggestive of the claimed storage of one value in a linked list of a plurality of nodes.

Thus, all the claim limitations are not shown to be suggested by the White-Hardy-Carey combination.

The alleged motivation for combining Hardy with White does not support a *prima facie* case of obviousness. The alleged motivation states that "it would have been obvious ... to use Hardy's methods of memory allocation/deallocation (col. 8, lines 4-27) with White's invention (pg. 176, col. 2, par. 3) to provide memory space for White's Bignums (pg. 177, par. 1 'Bignums are allocated in units of at least one 32-bit word') because one of ordinary skill in the art would have been motivated to provide an

efficient memory management system (Hardy col. 8, line 4 'memory must be managed efficiently') to support White's disclosure of memory allocation (pg. 176, col. 2, par. 3)." This alleged motivation is improper because it is unsupported by evidence.

The alleged motivation draws the conclusion, without supporting evidence, that White's memory management is less efficient than that taught by Hardy. Furthermore, there is no evidence presented that provides reasons to replace White's approach to memory management with Hardy's approach. Without supporting evidence the alleged motivation is speculative and simply a hindsight-based reconstruction of the invention. Therefore, the alleged motivation to combine Hardy with White is insufficient to support *prima facie* obviousness.

The limitations of claim 10 are not shown to be suggested by White. The Examiner cites White's "seamless interface between fixnums and bignums" as suggesting the limitations of overloading language-provided memory allocation and deallocation operators with large-integer operators that allocate and deallocate storage nodes. However, even if one assumes that White's numerical operators are overloaded, it does not necessarily follow that memory allocation operators would also have to be overloaded to support allocation and deallocation of storage nodes as claimed.

In the Final Office Action, the Examiner explains that "providing a user invisible transition between fixnums and bignums would certainly imply to one of ordinary skill in the art that any action on a fixnum use the same function calls and / or operators as would be used on a bignum, and vice-versa[, otherwise] the distinction would be visible to the user, contradicting White's disclosure..." It is respectfully submitted that those skilled in the art will recognize that memory allocation and deallocation operations are not operations on a fixnum as the explanation states. Nor would they be operations a user would want to use in manipulating bignums. Contrary to the Examiner's reasons, to make manipulation of bignums seamless to the user, it would be undesirable to force the user to engage memory management operations. Therefore, the Office Action fails to show that the limitations of claim 10 are suggested by White.

The limitations of recursive operations as set forth in claim 11 are not shown be suggested by the White-Hardy-Carey combination along with the teachings of Knuth.

The Examiner admits that the White-Hardy-Carey combination does not suggest recursion and is incorrect in his asserted definition of recursion. In the final Office Action the Examiner asserted that an "algorithm is recursive in that it repeatedly performs the same steps (d3-D6) on a smaller and smaller subset of the initial data ... until it reaches an ending or base condition..." It is respectfully submitted that those skilled in the art will recognize that the Examiner described an iterative approach, and recursion has a more specific definition. A function that calls itself is said to be recursive (http://foldoc.org/). The iterative approach shown in Knuth is not recursive. Therefore, the limitations of claim 11 are not shown to be suggested by the White-Hardy-Carey combination.

Claims 2-4, 6-9, and 12-20 depend from the base claims having the limitations discussed above and are not shown to be unpatentable over the prior art for at least the reasons set forth above.

In view of the above, Appellant submits that the rejections are improper, the claimed invention is patentable, and that the rejections of claims 1-4 and 6-20 should be reversed. Appellant respectfully requests reversal of the rejections as applied to the appealed claims and allowance of the entire application.

No extension of time is believed to be necessary for consideration of this response. However, if an extension of time is required, please consider this a petition for a sufficient number of months for consideration of this response. If there are any additional fees in connection with this response, please charge Deposit Account No. 50-0996 (USYS.030PA).

Respectfully submitted,

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